LA CROSSE®
TECHNOLOGY

Model 404-1220

20” Atomic Wall Clock

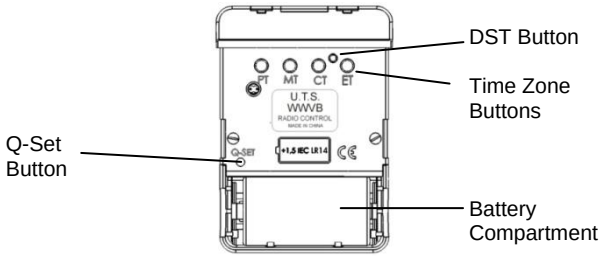
Welcome to the world of radio controlled timekeeping technology. We hope you will enjoy the convenience of never having to set your clock again and the confidence of knowing the exact time.

INITIAL SETUP:

1. Install 1 fresh C, LR14 1.5 volt ALKALINE battery at night.
2. The hands will spin to 12:00, 4:00 or 8 o’clock and wait for a WWVB signal.

3. THAT’S IT! During the night your clock will automatically set itself to Pacific Time.

4. After the clock has set itself to Pacific Time, press the correct time zone button for your location.



DETAILED SET UP:

1. Install 1 fresh C, LR14 1.5 volt ALKALINE battery into the clock, observing correct polarity.
   Note: Best done at night when the signal is strongest.
2. The hands will spin to 12:00, 4:00 or 8 o’clock and wait for a WWVB signal. This is normal behavior.
   Note: Do not press any buttons at this time. The hands will not move until a WWVB signal is received. This may take up to 5 nights due to location or interference.
3. When the WWVB signal is received the clock will set to its default of Pacific Time.
4. **After** the clock has set itself to Pacific Time, select a different time zone if desired, by holding the time zone button for 5 seconds. The hands will correct themselves to the new time. The clock has four time zone settings.
   Time Zone Buttons:
   PT Pacific
   MT Mountain
   CT Central
   ET Eastern

Complete set up for this clock is to simply install one fresh C, LR14 ALKALINE battery and wait. Due to the nature of long wave radio signals it is normally not possible to receive a signal during the day so it is best to install the battery late in the evening. Once the battery is installed the clock will begin searching for a signal. Stand the clock in an upright position near a window with the front or back of the clock facing Colorado. If a signal is not received it will fast-forward the hands to the 4, 8, or 12 o’clock position and search for WWVB. Within five minutes the clock should either: receive the WWVB signal and set itself to the exact time, or it will determine that the signal is not receivable at its current location and time of day. The hands will remain at the 12:00, 4:00 or 8:00 o’clock position until the WWVB signal is received.

The clock will continue to search for a WWVB signal at 15 minutes and 30 seconds before the following hours: 00:00, 01:00, 02:00, 03:00, 04:00, 06:00, 12:00, 18:00, 22:00, 23:00 and compares internal time with the new information. For increased battery life, receiving time is limited to 10 minutes.

The wonderful advantage of owning a La Crosse Technology radio controlled clock is that it is virtually trouble free. If the clock receives a clear signal it will set itself perfectly. If it does not receive a signal consider the following:

- **Battery** The La Crosse Technology clock must have a fresh battery to receive and process the time signal.

Note: Batteries are the number one warranty issue. Alkaline battery is recommended. A battery that is overpowered or underpowered may cause erratic function

- **Location** Try a different location, ideally near a window. It should be at least six feet from computers, TVs, air conditioners, other Radio-Controlled clocks and other electrical appliances that cause interference.
- **Weather** Electrical storms between your location and Colorado during the night will interfere with the WWVB signal.

DST (Daylight Saving Time) ON/OFF:
The change to and from DST is based on an embedded bit in the WWVB signal that tells the clock when to change. DST is defaulted to the ON position. The clock will make the adjustment to and from DST automatically when the signal is received. It is not necessary to press the DST button to change to standard time.

In areas where no DST is observed deactivate DST by pressing the DSTOFF switch. Pressing DST-OFF during DST the clock will switch to Standard Time. Press it again DST will be activated again. Pressing DST-OFF during ST the clock will switch to DST.

Q-SET BUTTON:
In some cases, the La Crosse Technology clock may not receive the WWVB signal due to atmospheric disturbances or hard to reach locations such as inside shopping malls. In this case, please use the **Q-Set** button, located at the back of the clock to manually set the time.

SET TIME:
On rare occasions it is not possible to receive a WWVB signal at the location of the clock. In this instance the clock may be set manually and will operate as a quartz clock.

1. Press and hold the Q-Set Button on the backside of the movement until the second hand starts running.
2. Release the button quickly (less than 3 seconds) and press it again to set actual time.
3. Three seconds after releasing the Q-Set Button your clock will start working as a Quartz Clock.
4. In Quartz Mode your clock will try to receive each even hour. If a signal is received it will override the manual set time.

AUTO CORRECTION:
The clock automatically checks its hands position daily between 3:00 and 4:05 (pm). If hands position is not equal to internal time, the hands are driven (quick run) to the correct time again. You will see the hands spin completely around during this correction. This is normal behavior.

ADDITIONAL INFORMATION:
For a better understanding of how and why your clock works please continue reading.

The La Crosse Technology clock is designed for indoor use only. Select a location to place your radio controlled clock where it will be at least six feet away from a TV, computer, air conditioner or other household electrical appliances. The optimal location is near a window. Windows facing Colorado provide the best signal.

The WWVB time signal will easily penetrate masonry and wood framed buildings. WWVB will penetrate almost every residential building and most steel buildings if they have adequate windows. It is not possible, however, for WWVB to penetrate most indoor shopping malls and rooms in the center of large office buildings that do not have windows. In buildings that WWVB cannot penetrate you may set the time using the manual time set button. When the clock receives the WWVB signal it will automatically set the hands to the exact time.

La Crosse Technology clocks do not receive or process radio controlled time signals from Germany's DCF 77, Japan's J Ga AS, or England's MSFs atomically regulated transmitters. La Crosse Technology clocks can be manually set and used anywhere.

For more information on the NIST and radio controlled time, see *www.boulder.nist.gov/timefreq/*

NOTHING IS MORE PRECISELY MEASURED THAN TIME!
And nothing keeps track of time more precisely and trouble free than La Crosse Technology radio controlled clocks.

Since the beginning of time, man has been fascinated with the measurement of time and has devised more accurate machines to trap and measure time. Today, time is precisely measured in the United States by the most accurate clock in North America, the Atomic Clock of the US National Institute of Standards and Technology, Time and

Frequency Division in Boulder, Colorado. A team of atomic physicists continually measures every second of every day to an accuracy of ten billionths of a second per day. These physicists have created an international standard, measuring a second as 9,192,631,770 vibrations of a Cesium 133 atom in a vacuum. This atomic clock regulates the WWVB radio transmitter located in Fort Collins, Colorado, where the exact time signal is continuously broadcast throughout the United States at 60 kHz to take advantage of stable long wave radio paths found in that frequency range. Radio waves at these low frequencies use the earth and the ionosphere as a wave-guide and follow the curvature of the earth for long distances.

The built in antenna system will receive the WWVB signal anywhere in North America within 2000 miles of Fort Collins where long-wave radio reception is undisturbed. A microprocessor activates the receiver and processes the time signal from Fort Collins overnight. Through the radio signals, La Crosse Technology radio controlled clocks always keep precise time. The changeover from standard time to daylight saving time, and vice versa, takes place automatically with the same precision.

FREQUENTLY ASKED QUESTIONS:

Q. How long will the battery last?
A: A good "C" alkaline battery will last over one year. If your clock is located in an area with little interference where it can quickly receive a signal the battery can last much longer than one year.

Q. Can this La Crosse Technology clock be used outdoors?
A. No. Outdoor use is not recommended for this clock. Operating range is 23 to 131 degrees Fahrenheit.

Q. Can this La Crosse Technology clock be wired to control timing circuits?
A. No. Modifications to the clock will void the warranty.

Q: This movement cannot receive, but other movements have reception inside same room.
A: Check battery voltage. 1.48-1.7 volts are best for optimum performance.
A: Check that the clock is not within 6 feet of TV-sets, monitors, telephone-sets or other items that may cause interference.

Q: Is there a booster antenna to receive the WWVB signal in a difficult location?
A. No. Modifications to the clock will void the warranty.

Q: Clock spins continually. It does not stop (more than 4min).
A: Check battery voltage. 1.48-1.7 volts are best for optimum performance.

Q: Hands stop on 4:00, 8:00 or 12:00 forever.
A: This is normal restart behavior for the clock. The hands will spin to 4:00, 8:00 or 12:00 and not move until the WWVB signal is received. This may take up to five nights dependent on interferences.

Q: Clock receives the WWVB signal, but shows wrong time.
A: Check if correct Time Zone is selected. Hold the correct time zone button for 5 seconds and the hands should correct.
A: Check battery voltage. 1.48-1.7 volts are best for optimum performance.
A: Locate the bronze colored pins in the upper left region of the movement on the back of the clock. Short across the pins briefly with a screwdriver or similar metal object and allow the hands to spin. The hands will stop all pointing at 12 if they are properly aligned. Allow the clock to receive a signal and set itself. Then select the correct Time Zone for your area.

Q: Battery was removed and put in again, but the movement does not restart and the hands do not spin.
A: Remove the battery and press the Q-Set button 20 times to discharge electricity. Leave the battery out for 15 minutes. Install a fresh C LR14 alkaline battery. The hands should sin to 4, 8 or 12 o'clock.
A: Check battery voltage. 1.48-1.7 volts are best for optimum performance.

CHANGING BATTERIES:

For best performance, batteries should be replaced at least once a year to maintain the best running accuracy. Ensure that the batteries used are new and the correct size. Remove the battery and press the Q-Set button 20 times to discharge electricity. Leave the battery out for 15 minutes.

Please help in the preservation of the environment and return used batteries to an authorized depot.

WARRANTY

La Crosse Technology, Ltd provides a 1-year limited warranty on this product against manufacturing defects in materials and workmanship. This limited warranty begins on the original date of purchase, is valid only on products purchased and used in North America and only to the original purchaser of this product. To receive warranty service, the purchaser must contact La Crosse Technology, Ltd for problem determination and service procedures. Warranty service can only be performed by a La Crosse Technology, Ltd authorized service center. The original dated bill of sale must be presented upon request as proof of purchase to La Crosse Technology, Ltd or La Crosse Technology, Ltd's authorized service center.

La Crosse Technology, Ltd will repair or replace this product, at our option and at no charge as stipulated herein, with new or reconditioned parts or products if found to be defective during the limited warranty period specified above. All replaced parts and products become the property of La Crosse Technology, Ltd and must be returned to La Crosse Technology, Ltd. Replacement parts and products assume the remaining original warranty, or ninety (90) days, whichever is longer. La Crosse Technology, Ltd will pay all expenses for labor and materials for all repairs covered by this warranty. If necessary repairs are not covered by this warranty, or if a product is examined which is not in need or repair, you will be charged for the repairs or examination. The owner must pay any shipping charges incurred in getting your La Crosse Technology, Ltd product to a La Crosse Technology, Ltd authorized service center. La Crosse Technology, Ltd will pay ground return shipping charges to the owner of the product to a USA address only.

Your La Crosse Technology, Ltd warranty covers all defects in material and workmanship with the following specified exceptions: (1) damage caused by accident, unreasonable use or neglect (including the lack of reasonable and necessary maintenance); (2) damage occurring during shipment (claims must be presented to the carrier); (3) damage to, or deterioration of, any accessory or decorative surface; (4) damage resulting from failure to follow instructions contained in your owner's manual; (5) damage resulting from the performance of repairs or alterations by someone other than an authorized La Crosse Technology, Ltd authorized service center; (6) units used for other than home use (7) applications and uses that this product was not intended or (8) the products inability to receive a signal due to any source of interference. This warranty covers only actual defects within the product itself, and does not cover the cost of installation or removal from a fixed installation, normal set-up or adjustments, claims based on misrepresentation by the seller or performance variations resulting from installation-related circumstances.

LA CROSSE TECHNOLOGY, LTD WILL NOT ASSUME LIABILITY FOR INCIDENTAL, CONSEQUENTIAL, PUNITIVE, OR OTHER SIMILAR DAMAGES ASSOCIATED WITH THE OPERATION OR MALFUNCTION OF THIS PRODUCT. THIS PRODUCT IS NOT TO BE USED FOR MEDICAL PURPOSES OR FOR PUBLIC INFORMATION. THIS PRODUCT IS NOT A TOY. KEEP OUT OF CHILDREN'S REACH.

This warranty gives you specific legal rights. You may also have other rights specific to your State. Some States do no allow the exclusion of consequential or incidental damages therefore the above exclusion of limitation may not apply to you.

For warranty work, technical support, or information contact:

La Crosse Technology, Ltd
2817 Losey Blvd. S.
La Crosse, WI 54601

Customer Support on the web:
www.lacrossetechnology.com/404-1220

Product Registration:
www.lacrossetechnology.com/support/register.php

Contact Support: 1-608-782-1610